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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/807,385

03/24/2004

Po Sheng Shih

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EXAMINER

HAILEMARIAM, EMMANUEL

ART UNIT

PAPER NUMBER

2609

MAIL DATE

DELIVERY MODE

05/17/2007

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/807,385	Applicant(s) SHIH, PO SHENG	
	Examiner Emmanuel Hailemariam	Art Unit 2609	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 03 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-8 is/are pending in the application.
 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-8 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 03/24/04 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☒ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date ____. | 6) <input type="checkbox"/> Other: ____. |

DETAILED ACTION

Oath/Declaration

1. The oath or declaration is defective. A new oath or declaration in compliance with 37 CFR 1.67(a) identifying this application by application number and filing date is required. See MPEP §§ 602.01 and 602.02.

The oath or declaration is defective because:
It does not state that the person making the oath or declaration acknowledges the duty to disclose to the Office all information known to the person to be material to patentability as defined in 37 CFR 1.56.

Specification

2. The disclosure is objected to because of the following informalities: on [0017] the last 2 lines " $B_1(t)$ " should be $B_{v1}(t)$ ". Appropriate correction is required.

2 The specification is objected to as failing to provide proper antecedent basis for the claimed subject matter. See 37 CFR 1.75(d)(1) and MPEP § 608.01(o). Correction of the following is required: "deriving an effective brightness from the quotient by driving the product by the duration of the vertical scanning (claim 1).

Wherein each of the gradation voltage is higher than each gradation voltage determined by steady light transmittance Vs voltage curve for the same gray level so as to accelerate the response speed of liquid crystal display "(claim 1, claim 5).

Drawings

3. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they do not include the following reference sign(s) mentioned in the description: reference character " T_{vx} " which is described in the specification is not found in fig.5. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

2. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the "working voltage " V_1, V_2, V_3 " must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure

Art Unit: 2609

is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 112

5. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter, which the applicant regards as his invention.

6. Claims 1 and 6 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 1 line 7 and 9, and claim 6 recite the limitation "the duration" and "the quotient" respectively. There is insufficient antecedent basis for this limitation in the claim.

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are

Art Unit: 2609

such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. Claims 1- 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Applicant's Admitted Prior Art (AAPA) (Fig. 1 and 2).

As to claims 1 & 6, AAPA discloses a method for overdriving a liquid crystal display [0002], applying a working voltage and a black voltage sequentially to a plurality of pixels on the liquid crystal display within a vertical scanning period [0005]; employing gradation voltages (fig. 1(111)) defined by a dynamic light transmittance vs. voltage curve (see fig.2), comprising the steps of: Integrating a brightness curve (fig. 2; [0007] resulting from the working voltage with time during the duration of the working voltage (fig. 2 (V_L 255,254, 253) data signal) to obtain a product [0007 and 0008], and deriving an effective brightness from the quotient by dividing the product by the duration of the vertical scanning period; ([0005] (see fig.2).

Transferring the effective brightness into an effective light transmittance; [0008]. Iterating the aforesaid steps (a)-(c) to obtain a light transmittance vs. voltage curve; and (see fig. 2).

Defining a plurality of gray levels and gradation voltages corresponding to the plurality of gray levels [0006 and 0007] according to the light transmittance vs. voltage curve (see.fig.2); wherein each of the gradation voltages is higher than each of the gradation voltages determined by a steady light transmittance vs. voltage curve for the same gray level so as to accelerate the response speed of the liquid crystal display [0008]; and a black voltage (fig. 1, (112)) sequentially to a plurality of pixels on the liquid

crystal display [0004] within a vertical scanning period (see fig. 1 for 'vertical scanning period',) black data insertion driving method.

AAPA discloses applying a working voltage and a black voltage frame by frame (fig.1 [0006]).

AAPA doesn't explicitly teach applying these two voltages sequentially. However, one skill in the art can recognize applying frame –by –frame would obviously perform sequentially.

As to claim 2, AAPA discloses the light transmittance vs. voltage curve expresses a dynamic relation between the light transmittance and the gradation voltages ([007] see fig.1).

As to claim 3 & 8, AAPA discloses a dividing the effective brightness by the brightness of a backlight source in the liquid crystal display to obtain the effective light transmittance. [0008].

As to claim 5, AAPA discloses each of the gradation voltages given by step (e) is higher than each of the gradation voltages determined by a steady light transmittance vs. voltage curve for the same gray level so as to accelerate the response speed of the liquid crystal display (fig.2 [0006]).

As to claim, 4 & 7, AAPA discloses a liquid crystal display simultaneously employs a black-data- insertion driving method (col.10 lines 4-28 fig.4).

Conclusion

Art Unit: 2609

9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Tanaka (6700559) disclose a liquid crystal display unit having fine color control.

Mochizuki (5278684) disclose a parallel-aligned choral nematic liquid crystal display element.

Inaba (5521727) disclose a liquid crystal device whereby a single period of data signals is divided in to plural pulses of varying pulse width and polarity.

Correspondence

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Emmanuel Hailemariam whose telephone number is 571-270-1545. The examiner can normally be reached on M-F 8:00am - 5:00pm.


If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Amare Mengistu can be reached on 571-272-7674. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 2609

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

E.H

03/08/07


AMARE MENGISTU
SUPERVISORY PATENT EXAMINER